

REMARKS

Claims 17 and 18 have been objected to as being of improper dependent form. In response, Applicants have cancelled Claims 17 and 18, without prejudice, thereby rendering this objection moot.

Claims 1, 2, 8 and 9 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,772,857 to Zhang. Applicants respectfully traverse this rejection.

Applicants respectfully submit that the Zhang reference fails to disclose all of the features of the present invention. In particular, the Zhang reference fails to disclose a magnetic recording medium, or a method of producing a magnetic recording medium, that includes the claimed first and second underlayers originally defined in now-cancelled dependent Claims 4 and 11, which are now incorporated into independent Claims 1 and 8. In the Final Office Action, the Examiner did not rely on the Zhang reference for these features, but instead relied upon the Malhotra et al. reference for the first and second underlayers and the Bian et al. reference for modifying the underlayers. A discussion of Malhotra et al. reference and Bian et al. is included below, in the section responding to the §103 rejection that includes the Malhotra et al. and the Bian et al. references. Thus, as all of the features of amended independent Claims 1 and 8 are not disclosed in the Zhang reference, Applicants respectfully request the withdrawal of this §102(b) rejection of independent Claims 1 and 8, and associated dependent Claims 2 and 9.

Claims 1, 2, 8, 9 and 16 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 5,772,857 to Matsuda et al. Applicants respectfully traverse this rejection.

Applicants respectfully submit that the Matsuda et al. reference fails to disclose all of the features of the present invention. In particular, the Matsuda et al. reference fails to disclose a magnetic recording medium, or a method of producing a magnetic recording medium, that includes the claimed first and second underlayers originally defined in now-cancelled dependent Claims 4 and 11, which are now incorporated into independent Claims 1 and 8 (as correctly acknowledged by the Examiner in paragraphs 33 and 36 of the Final Office Action). In the Final Office Action, the Examiner did not rely on the Matsuda et al. reference for these features, but instead relied upon the Malhotra et al. reference for the first and second underlayers (*see* paragraphs 34 and 35 of the Final Office Action) and the Bian et al. reference for modifying the underlayers (*see* paragraphs 37 and 38 of the Final Office Action). A discussion of Malhotra et al. and Bian et al. is included below, in the section responding to the §103 rejection that includes the Malhotra et al. and the Bian et al. references. Thus, as all of the features of amended independent Claims 1 and 8 are not disclosed in the Matsuda et al. reference, Applicants respectfully request the withdrawal of this §102(e) rejection of independent Claims 1, 8, and 16, and associated dependent Claims 2 and 9.

Claims 3 and 10 stand rejected under 35 U.S.C. §103 as being unpatentable over Matsuda et al. Claims 7 and 15 stand rejected under 35 U.S.C. §103 as being unpatentable over Matsuda et al. in view of the IEEE article to Paik et al. Claims 4, 5, 11, 12, 17, and 18 stand rejected under 35 U.S.C. §103 as being unpatentable over Matsuda et al. in view of Malhotra et al. and further in view of United States Patent No. 5,789,056 to Bian et al. Applicants have cancelled Claims 4 and 11, without prejudice, and have added the subject matter of these claims to their associated independent claims (Claims 1 and 8). Accordingly, with regard to Claims 4 and 11, these

rejections are moot. However, Applicants will respond to all of these rejections as though they applied to amended independent Claims 1, 8 and 16.

Applicants respectfully submit that the cited references, alone or in combination, fail to disclose or suggest all of the features of the present invention. In particular, the cited references, either alone or in combination, fail to disclose or suggest the claimed magnetic recording medium, or method of producing such a medium, as defined in independent Claims 1, 8 and 16, that includes, *inter alia*, first and second underlayers in which the second underlayer has “a larger sum total content of elements other than Cr” than the first underlayer.

As correctly acknowledged by the Examiner in paragraph 33 of the Final Office Action, the Matsuda et al. reference fails to disclose or suggest first and second underlayers. Accordingly, the Examiner relied upon Malhotra et al. for this feature (*see* paragraph 34 and 35 of the Final Office Action). Further, as also correctly acknowledged by the Examiner, the combination of Matsuda et al. and Malhotra et al. lacked a teaching that the second underlayer contains a larger sum total content of elements other than Cr than the first underlayer (*see* paragraph 36 of the Final Office Action). Accordingly, the Examiner relied upon Bian et al. for this feature (*see* paragraphs 37 and 38 of the Final Office Action).

Applicants respectfully submit that one of ordinary skill in the art would not have found it obvious to have modified the combination of Matsuda et al. and Malhotra et al. in light of Bian et al. in the manner suggested by the Examiner. Initially, Applicants respectfully submit that both the Malhotra et al. reference and the Bian et al. reference relate to recording media having a single magnetic layer, and fail to teach or suggest a magnetic recording medium having a magnetic

layer with a multi-layer structure and an underlayer with a multi-layer structure, as defined in independent Claims 1, 8 and 16.

Additionally, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to make the multiple levels of modification suggested by the Examiner in order to arrive at the claimed invention defined in independent Claims 1, 8, and 16. More specifically, Applicants disagree that one of ordinary skill in the art would have been motivated to make a first modification in which the Matsuda et al. reference, which only contains a single underlayer, is modified in light of the Malhotra et al. reference in order to obtain first and second underlayers; and then to further modify the amount of elements other than Ti in these underlayers in light of the Bian et al. reference.

Further, Applicants respectfully submit that the Bian et al. reference actually teaches away from the claimed first and second underlayers in which the second underlayer has a larger sum total content of elements other than Cr than the first underlayer. More specifically, column 4, lines 1-7 of Bian et al. discuss that the “underlayer” (which the Examiner has equated with the claimed second underlayer) should have less Ti than that found in the “seed layer” (which the Examiner has equated with the claimed first underlayer) in order to optimize the lattice parameter matching. In other words, the Bian et al. reference teaches that the second underlayer has a *smaller* sum total content of Ti (which is the only element other than Cr) than the first underlayer (referred to in Bian et al. as the seed layer) in order to optimize the lattice matching. Thus, the Bian et al. reference teaches the opposite relative amounts of elements other than Cr than that defined in independent Claims 1, 8 and 16.

In response to this argument, the Examiner asserts in the Advisory Action (in the section entitled “Continuation of box 5(c)”) that the Bian et al. reference “clearly envisioned embodiments wherein [a] CrTi seedlayer containing slightly greater than 5 atomic % Ti is utilized beneath a CrTi second underlayer that contains 30 atomic % Ti.” However, although the Bian et al. reference may *mention* an instance in which there is a larger sum total content of elements other than Cr in the second underlayer than in the first underlayer, there is no actual *motivation* to arrive at this result because the actual explicit teaching of Bian et al. is to have the second underlayer have a smaller sum total content of elements other than Cr than that found in the first underlayer, which is exactly the opposite of the relationship defined in independent Claims 1, 8 and 16.

In fact, the Bian et al. reference does not provide an actual example of a case in which the claimed relationship can be found. Instead, the Bian et al. reference merely provides acceptable ranges of certain elements in each layer. However, since the Bian et al. reference is used in a §103 rejection to modify another reference, the mere fact that there are values within the disclosed ranges that meet the claimed relationship is not sufficient without a suggestion or motivation to select those values to modify the primary reference. In the case of In re Mills, 16 USPQ2d, 1431, 1432, Fed. Cir. 1990, the Federal Circuit stated that the mere fact that an apparatus is capable of being modified is not enough for an obviousness rejection without a motivation or suggestion to make such a modification. Accordingly, in the instant case, since there is no motivation to select the values that read on the claimed relationship, Applicants respectfully submit that the Examiner’s proposed combination would not have been obvious to one of ordinary skill in the art, especially because the Bian et al. reference suggests the exact opposite relationship to that defined in independent Claims

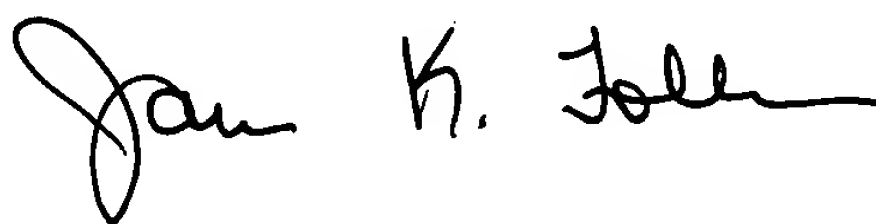
1, 8 and 16. Thus, Applicants respectfully request the withdrawal of these rejections of independent Claims 1, 8 and 16 and their associated dependent claims.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone conference would aid in the prosecution of the application, or that outstanding issues exist, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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